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*Owner's Manual*

# **SmartOnline™**

- **SU6K (6kVA)**
- **SU10K (10kVA)**

*On-Line, Extended-Run UPS Systems*

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This manual contains important instructions and warnings that should be followed during the installation, operation and storage of all Tripp Lite SmartOnline UPS Systems.

## ***UPS Location Warnings***

- Install your UPS indoors, away from excess moisture or heat, dust or direct sunlight.
- Install your UPS in a structurally sound area. Your UPS is extremely heavy; take care when moving and lifting the unit.
- Only operate your UPS at indoor temperatures between 32° F and 104° F (between 0° C and 40° C). For best results, keep indoor temperatures between 62° F and 84° F (between 17° C and 29° C).
- Leave adequate space around all sides of the UPS for proper ventilation: 12 in. (30 cm.) clearance at the rear; 4 in. (10 cm.) at sides and on top.
- Do not install the UPS near magnetic storage media, as this may result in data corruption.

## ***UPS Connection Warnings***

- The power supply for this unit must be single phase rated in accordance with the equipment nameplate. It also must be suitably grounded.

## ***Equipment Connection Warnings***

- Do not use Tripp Lite UPS Systems in life support applications in which a malfunction or failure of a Tripp Lite UPS System could cause failure or significantly alter the performance of a life support device.
- Connect your UPS's Grounding Terminal to a grounding electrode conductor.
- The SU6K contains its own energy source (battery). The output terminals may be live even when the UPS is not connected to an AC supply.

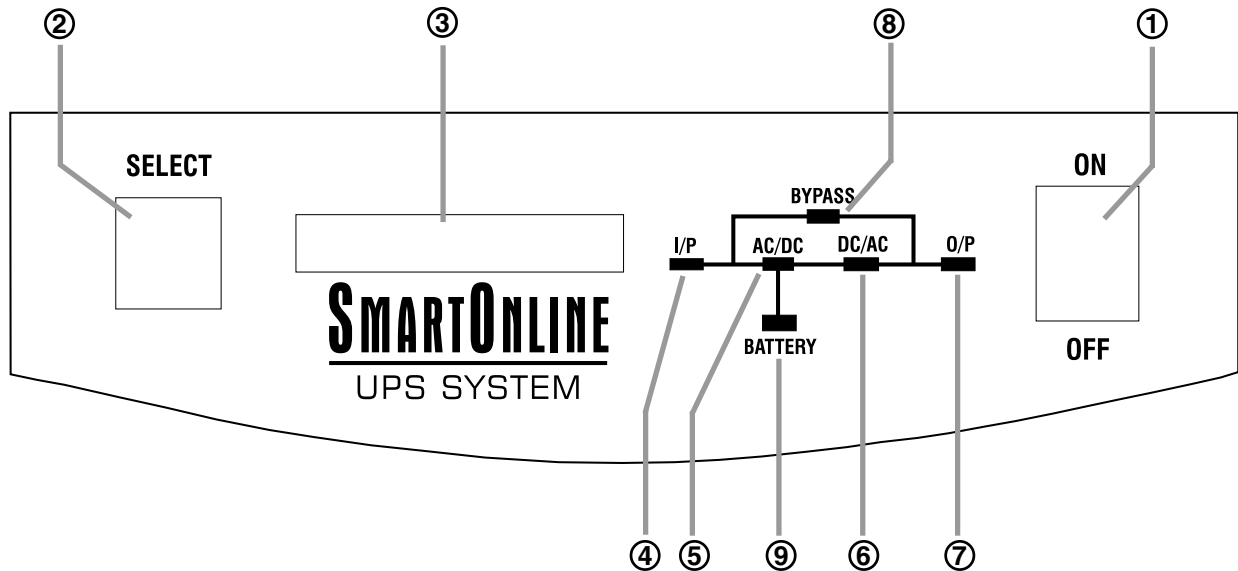
## ***Battery Warnings***

- Your UPS does not require routine maintenance. Do not open your UPS for any reason. There are no user-serviceable parts inside.
- Because the batteries present a risk of electrical shock and burn from high short-circuit current, batteries should be changed only by trained service personnel observing proper precautions. Replace the existing batteries with the same number and type of new batteries [(Sealed Lead-Acid) SU6K (twenty 12V/7AH batteries); SU10K (forty 12V/7AH batteries)]. Do not open the batteries. Do not short or bridge the battery terminals with any object.
- The UPS batteries are recyclable. Refer to local codes for disposal requirements, or if in the USA call 1-800-SAV-LEAD (1-800-728-5323) for complete recycling information. Do not dispose of the batteries in a fire.
- Connect only Tripp Lite battery packs to your UPS's external battery connectors.
- Do not operate your UPS without batteries.
- Fuses should be replaced only by factory authorized personnel. Blown fuses should be replaced only with fuses of the same number and type.
- Potentially lethal voltages exist within this unit as long as the battery supply is connected. Service and repair should be done only by trained personnel. During any service work, the UPS should be turned off or put into manual bypass (see pg. 12).
- During "hot-swap" battery replacement (when the UPS is on manual bypass and connected equipment is turned ON) your UPS will be unable to provide battery backup in the event of a blackout.
- Do not connect or disconnect the battery cabinets while the UPS is operating from the battery supply or when the unit is not in bypass mode.

# Control Panels

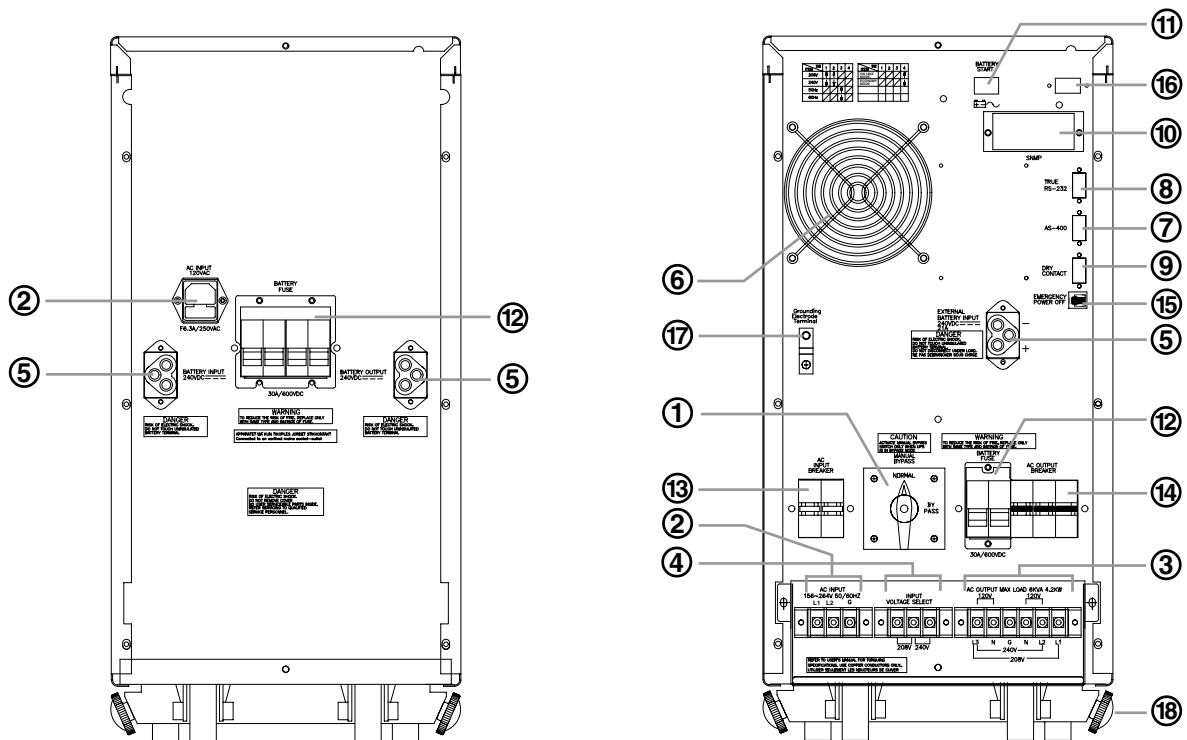
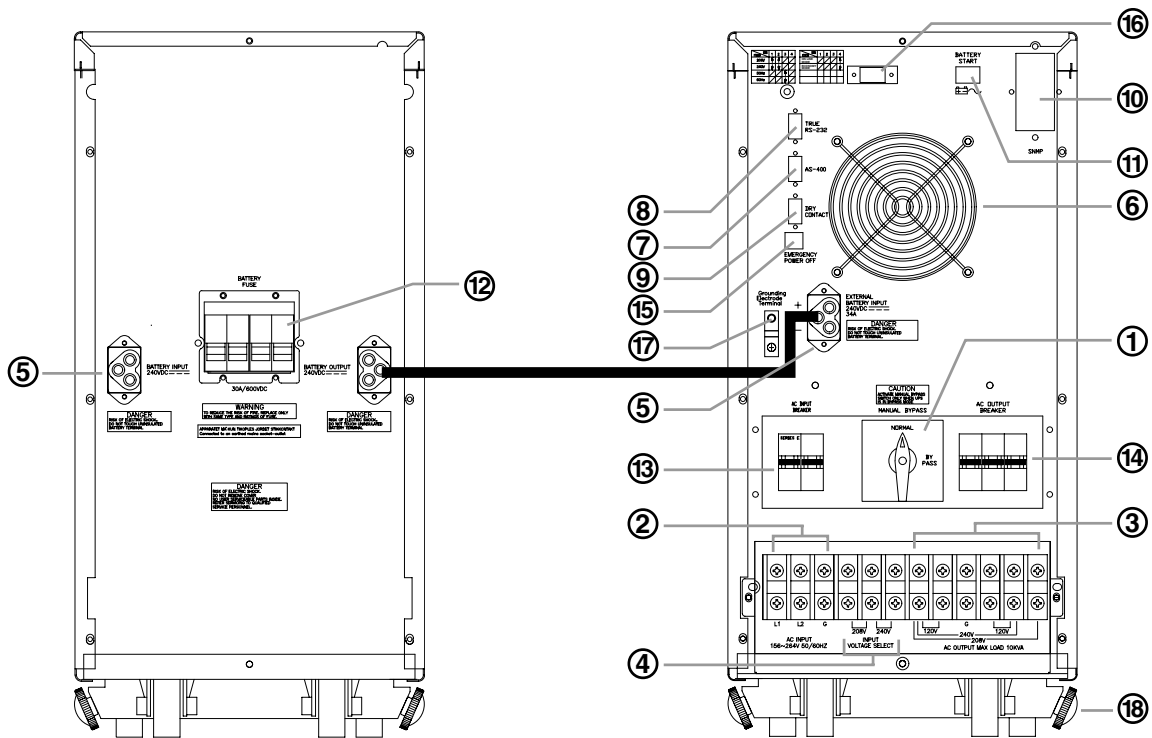
Familiarize yourself with the location and function of the front and rear panel features before installing and operating your UPS.

## FRONT PANEL



1. **“ON/OFF” Switch:** This momentary rocker switch turns the UPS System’s inverter ON and OFF.
2. **“SELECT” Button:** This button performs two functions: it allows you to browse through different power readings on the LCD Display by momentarily pressing the button; it also allows you to silence the UPS alarm by pressing and holding the button for 3 seconds.
3. **LCD Display:** This backlit (16x2 character) dot matrix display indicates a wide range of UPS operating conditions and diagnostic data. It will illuminate after you have properly completed installation and start-up and after the “ON/OFF” Switch is turned ON.
4. **“I/P” (Input) LED:** This green light will illuminate constantly to indicate an AC input supply is present.
5. **“AC/DC” (Converter) LED:** This green light will illuminate constantly to indicate the UPS’s AC/DC converter is activated.
6. **“DC/AC” (Inverter) LED:** This green light will illuminate constantly to indicate the UPS’s DC/AC inverter is activated.
7. **“O/P” (Output) LED:** This green light will illuminate constantly to indicate your UPS is supplying AC power to connected equipment.
8. **“BYPASS” LED:** This green light will illuminate when the UPS is providing filtered mains power without engaging its converter or inverter. Connected equipment will not receive battery power in the event of a blackout.
9. **“BATTERY” LED:** This red light will illuminate when the UPS is discharging the battery to provide connected equipment with AC power. An alarm will sound which can be cancelled by pressing and holding the “SELECT” switch for 3 seconds. The alarm will be cancelled, but the LED will remain illuminated.

# Rear Panels



## REAR PANELS

1. **Manual Bypass Switch:** This red and yellow dial is used in one step of putting the UPS in "BYPASS" mode, which must be done before performing any maintenance on the UPS with the connected load supported. (See page 12 for step-by-step instructions for going into "BYPASS.") While this switch is on "BYPASS," connected equipment will receive filtered AC mains power, but will not receive battery power in the event of a blackout.
2. **Input Terminal Block:** Use these terminals to connect your UPS to the AC main power input. Unscrew and remove terminal block plate for access. The optional SUBP battery pack's IEC-320 connector accepts its charger's input power cord.
3. **Output Terminal Block:** Use these terminals to connect your UPS to equipment. A plate covering the terminal block must be unscrewed and removed for access.
4. **Input Voltage Select Terminal Block:** Use these terminals to set your UPS's to receive your 208V AC or 240V AC line voltage. A plate covering the terminal block must be unscrewed and removed for access.
5. **External Battery Connector:** Use this to connect Tripp Lite Battery Packs. The SU10K requires a SU10KBP or SUBP to operate; additional SUBP's can be added to SU6K or SU10K systems for extra runtime. Refer to instructions available with the optional SUBP Battery Pack for connection instructions and safety warnings.
6. **Exhaust Fan:** This cools and ventilates the inside of the UPS.
7. **AS-400 Interface Port:** This female DB9 port connects your UPS to an IBM AS-400 computer interface via the AS-400 Cable included. It uses AS-400 communications to report UPS status and power conditions. Using this port, an IBM AS-400 computer can automatically save open files and shut down its operating system during a blackout. See "Communications," pg. 13, for details.
8. **"Smart" RS-232 Interface Port:** This female DB9 port connects your UPS to a workstation or server. It uses RS-232 communications to report UPS and power conditions. It is used with Tripp Lite software and the included RS-232 Cable to monitor and manage network power and to automatically save open files and shut down equipment during a blackout. See "Communications," pg. 13, for details.
9. **Dry Contact Interface Port:** This female DB9 port sends contact-closure signals to indicate line-fail and low-battery status. See "Communications," pg. 14, for details.
10. **Accessory Slot:** Remove the small cover panel and use optional accessories to remotely control and monitor your UPS. Contact Tripp Lite Customer Support for more information and a list of available SNMP, network management and connectivity products.
11. **"Battery Start" Switch:** This momentary rocker switch allows you to "cold-start" your UPS and use it as a stand-alone power source when utility-supplied AC power is not present. The switch enables the UPS's DC/AC Inverter. Before "cold-starting" your UPS, make sure your UPS and external battery cabinets are properly installed. Press and hold the "Battery Start" Switch and then press the "ON/OFF" switch to turn your UPS ON. To turn it OFF after "cold-start," press the "ON/OFF" Switch.
12. **Battery Fuses (SU6K & SUBP's Only):** The 30A/600V fuses protect your connected battery or battery bank.
13. **AC Input Breakers:** One double-pole circuit breaker controls input power to the UPS.
14. **AC Output Breaker:** Triple-pole circuit breakers control output power from the UPS.
15. **Remote "Emergency Power OFF" Connector:** This RJ11 modular jack allows remote emergency shutdown. See "Communications," pg. 14, for details.
16. **Inverter Operation DIP Switches:** Behind this removable panel are four DIP Switches that should be set to match your input voltage and input frequency. Your input voltage and frequency DIP switch settings **MUST** match your input. Your UPS **WILL NOT CONVERT** the voltage or frequency.
17. **Grounding Terminal:** This terminal connects to a grounding electrode conductor. **IT IS NOT SAFE TO OPERATE YOUR UPS WITHOUT CONNECTING IT.** The recommended conductor size is 8 AWG based on the UL 1778 standard.
18. **Stabilizers:** These supports extend to keep your UPS from rolling or tipping.

# Installation

## INVERTER OPERATION DIP SWITCH SETTINGS (SU10KPM SHOWN)

Using a small tool, set the four Inverter Operation DIP Switches (located on the rear panel of your UPS, see pg. 4-5 for location) to match your input voltage, input frequency and desired operational mode.

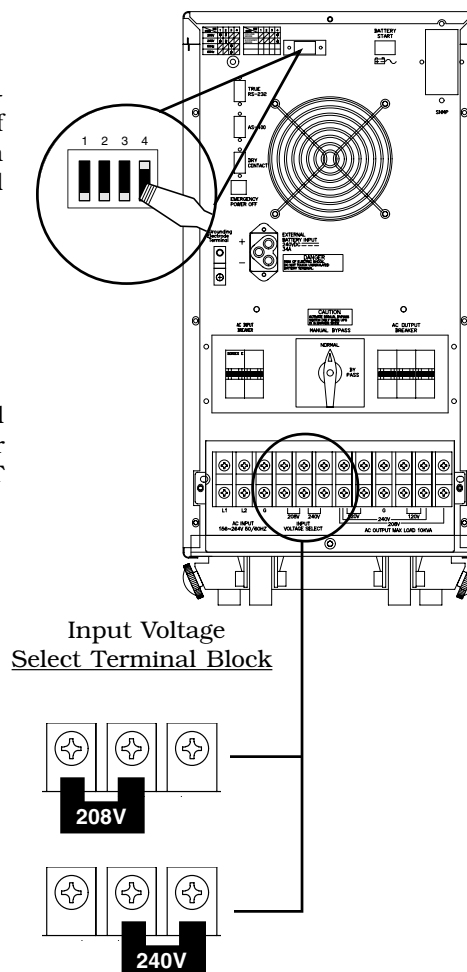
### Input Voltage Selection

(DIP Switches #1 & #2)

(Input Voltage Select Terminal Block)

These DIP switches and the Input Terminal Select Block must BOTH be set to match your input voltage. Your UPS WILL NOT CONVERT the voltage.

<u>Input Voltage</u>	<u>DIP Switch Position</u>
208V	#1 UP & #2 UP
240V	#1 DOWN & #2 DOWN



### Input Frequency Selection

(DIP Switch #3)

Your Input Frequency setting MUST match your input frequency. Your UPS WILL NOT CONVERT the frequency.

<u>Input Frequency</u>	<u>DIP Switch Position</u>
50 Hz	#3 UP
60 Hz	#3 DOWN

### Operational Mode Selection

(DIP Switch #4)

The "On-Line" Mode provides on-line operation with zero transfer time. The "Economy" Mode provides line-interactive operation for increased efficiency when on-line protection is unnecessary, thus reducing operating costs without affecting your UPS's output reliability during a power outage.

<u>Input Frequency</u>	<u>DIP Switch Position</u>
On-Line	#4 UP
Economy	#4 DOWN

## UPS LOCATION

Move your UPS over short distances using its wheels. Stabilize the UPS by releasing the stabilizers on each side of the unit. NOTE: Do not stack the UPS Systems or external battery packs.

## INPUT AND OUTPUT CONNECTION

### WIRING SELECTION

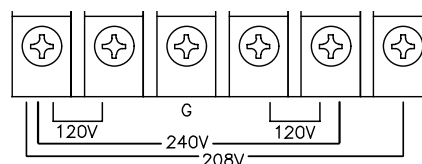
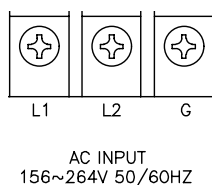
Choose appropriate cabling (depending on current carried; see chart below) to connect your UPS to an AC power supply and your equipment to your UPS:

MODEL	RATED INPUT CURRENT 208/240 1Ø 3 Wire	RATED OUTPUT CURRENT 120-208/240V 1Ø 3 Wire	RATED OUTPUT CURRENT 120V 1Ø 3 Wire	OUTPUT PROTECTION CIRCUIT
SU6K	30A 8 AWG (8mm <sup>2</sup> /60°C)	30A 8 AWG (8mm <sup>2</sup> /60°C)	2 x 32A 6 AWG (14mm <sup>2</sup> /60°C)	32A
SU10K	50A 6 AWG (14mm <sup>2</sup> /60°C)	50A 6 AWG (14mm <sup>2</sup> /60°C)	2 x 50A 4 AWG (22mm <sup>2</sup> /60°C)	63A

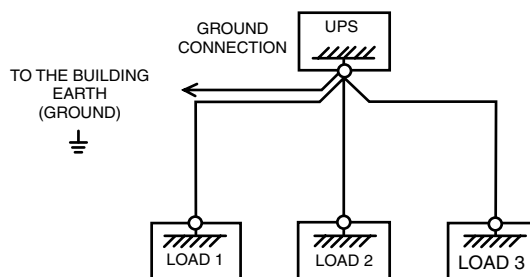
### WIRING CONNECTIONS

Connect your wiring to the input and output terminal blocks located on the lower rear panel of your UPS (see figure below). Before cable connection, turn the UPS OFF and pull out the fuse holder. Ensure the cable is fitted with a cable sleeve and is secured by a connector clamp. The minimum tightening torque is 35 lbs. per square inch. Connect the ground wire (typically colored green and yellow) to the terminal marked with the letter "G."

#### Cable Connection for 6kVA or 10kVA Output (6kVA shown)



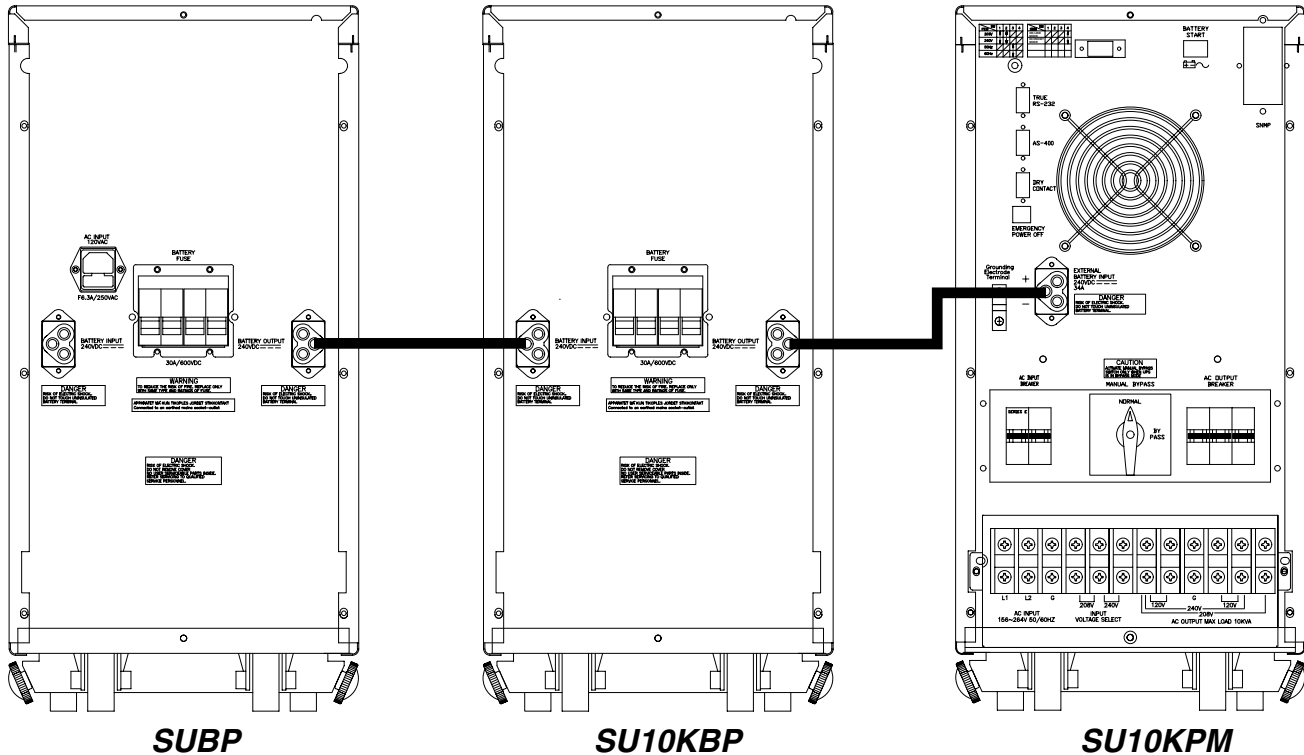
CAUTION: Observe the appropriate cable connection regulations [e.g. National Electrical Code (NEC) in the U.S.] at all times. Using cables of improper size may damage your equipment and cause fire hazards. Ground the UPS and the load equipment as shown in the figure.



## EXTERNAL BATTERY PACK CONNECTION

(SU6K: Optional; SU10K: Required)

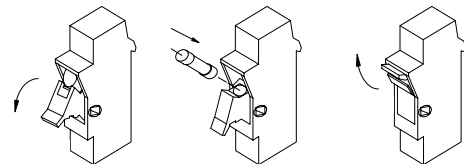
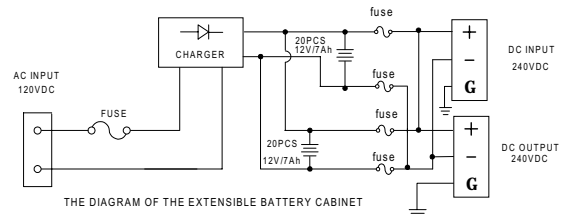
Since SU6K models contain internal batteries, connecting external battery packs (to extend runtime) is optional. SU10KPM models, however, do not have internal batteries and require an external battery pack connection to a SU10KBP or a SUBP. Using the supplied battery connection cable, insert one end into the External Battery Connector on the rear panel of your UPS and the other end into the Battery Output Connector on the rear panel of the external battery pack. Use the plug on either end of the supplied cable, but make sure that it is fully inserted into the connector. See figure below for daisy-chaining one or more external battery packs to your UPS.



Note: Optional Tripp Lite external battery packs (SUBP's) feature individual 120V AC input line cords and individual internal battery chargers. By adding multiple SUBP's individually connected to 120V AC input, the recharge time of a battery system will be dramatically reduced as compared to systems relying on only the UPS's main charger. While adding SUBP's without connecting their chargers will increase a battery system's reserve capacity, this will also increase the system's overall recharge time. See the figure to the right for the schematic diagram of the SUBP external battery pack.

## BATTERY FUSE REPLACEMENT

If one of your fuses has blown, you will notice no output voltage at zero load. Blown fuses should be replaced as shown in the diagram on the right. Since SU6K models contain internal batteries, the battery fuse holders are located on the rear panel of the UPS. Since SU10K models operate solely from external batteries, the battery fuse holders are located on the rear panel of the external battery pack(s). Note: SU6K models also support connections to optional external battery packs, which may require battery fuse replacement.





## **BATTERY CONDITION VERIFICATION**

When the UPS is operating from battery power, the alarm and LCD Display will both alert you to the UPS battery's charge condition.

Battery Charge Condition	Alarm	LCD Display
FULL	Short Beep (every 2 seconds)	ON BATTERY BATT = XXV XX%
LOW	Short Beep (every 1/2 second)	BATTERY LOW BATT = XXV XX%
UNDER	Continuous Beep	BATTERY UNDER SHUT DOWN

## **INITIAL BATTERY CHARGING (OPTIONAL)**

Your UPS System's battery is fully charged prior to shipping. However, if your UPS has been stored for an extended period, recharge its battery for 8 hours. To charge, turn on the AC Input Breaker. The LCD Display will illuminate and indicate "ON BYPASS." DO NOT turn on the AC Output Breaker to apply the load until the battery is fully charged. Once the UPS is in use, it will charge the batteries and maintain the charge level automatically.

# **Operation (Normal Conditions)**

## **TURNING THE UPS ON**

- Make sure the UPS is properly installed (see Installation section) and the Manual Bypass Key is set to NORMAL.
- Turn the AC Input Circuit Breaker ON, then turn the Output Circuit Breakers ON.
- If your AC input is providing power normally within your selected range (see Input Voltage Selection, pg. 6, and Specs, pg. 17), your connected load will energize. However, the UPS's inverter is not yet on. Press the front "ON/OFF" switch ON to begin inverter operation.
- If your AC input is not providing power normally, you have the option of starting from battery. (Your battery must be at least partially charged for this operation to succeed.) Press and hold both the "Battery Start" switch and the "ON/OFF" switch for three seconds to start your UPS in "ON BATTERY" mode. Note that some electronic equipment may draw more amps during startup; when starting from battery, consider reducing the initial load on the UPS.
- The UPS will perform a brief self-test and show the results on the LCD Display. (See Self-Test section, pg. 10, for display sequence.) After a successful self-test, the UPS will provide AC power from the inverter to your load.

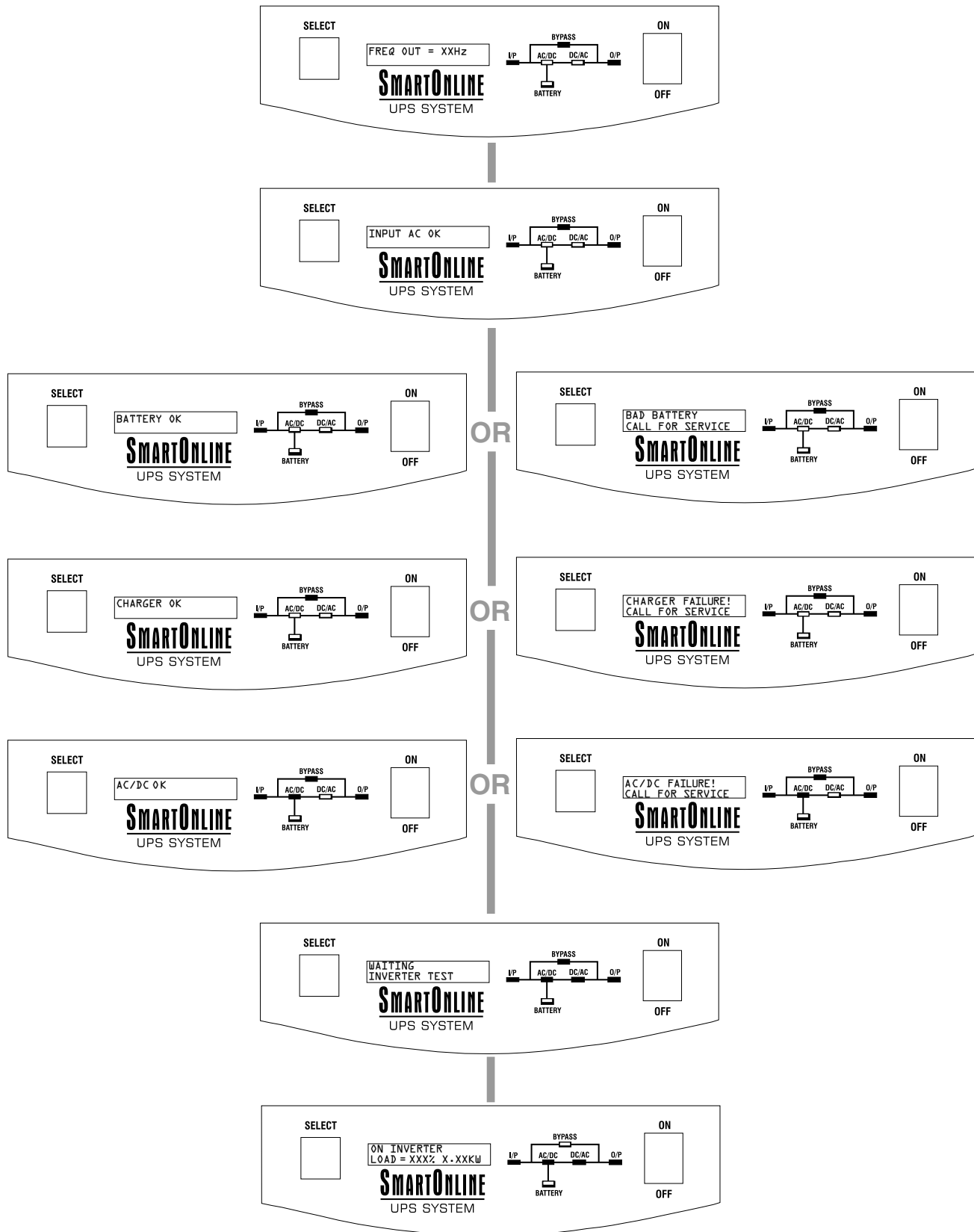
## **TURNING THE UPS OFF**

- Press the front "ON/OFF" Switch OFF. Your load will still be energized. The inverter is now off, but your UPS is not fully deactivated. The LCD Display will show "ON BYPASS."
- Turn the AC Input and Output Circuit Breakers OFF. Your load will no longer be energized, and the LCD display will be dark.

## SELF-TESTING

When you turn the UPS ON, it will perform a brief (about 25 second) self-test. See figure below for display sequence.\*

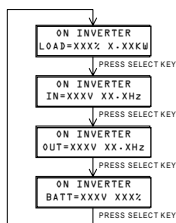
*\*Note: If starting from battery, the BATTERY LED will be lit and the I/P and BYPASS LEDs will not. The final LCD display in the diagram below appears when the UPS is operating normally under utility-supplied AC input power.*



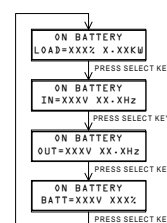
## LCD DISPLAY SELECT SWITCH

Momentarily press the “SELECT” switch on the front panel to browse through different power readings on the LCD Display. The LCD Display will show which one of four operational modes your UPS is currently in: Normal, Economy, On-Battery, or Bypass. Also, as you press the “SELECT” switch, the LCD Display will browse through load, input, output and battery conditions.

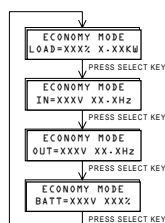
### "NORMAL" MODE OPERATION



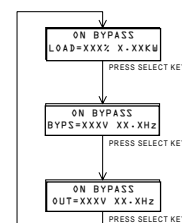
### "ON-BATTERY" MODE OPERATION



### "ECONOMY" MODE OPERATION



### "ON BYPASS" MODE OPERATION



## Operation (Special Conditions)

### OPERATION ON BYPASS—VOLTAGE OUT OF RANGE

While in Bypass Mode, the UPS monitors the input voltage, which on Bypass equals the output voltage. If the output voltage passes out of an acceptable range (between 15% higher and 20% lower than nominal), the UPS displays the condition on its LCD and stops supplying output power to its load. If power levels return to an acceptable level, the UPS resumes supplying power to the load, and its LCD reports that output voltage was too high or too low at one time, but has returned to nominal.

Bypass Voltage Condition	LCD Display Message
>15% Higher than Nominal	BYPASS AC TOO HI
>20% Lower than Nominal	BYPASS AC TOO LO
Was Too High, Now Nominal	BYPASS AC WAS HI
Was Too Low, Now Nominal	BYPASS AC WAS LO

### OPERATION ON OVERLOAD

When the UPS detects an output overload, it will commence a countdown (the length of time depending on the severity of the overload). If the UPS is still overloaded at the end of the countdown, the UPS will automatically shut down and go into Bypass Mode.

Overload Condition	LCD Display Message	Countdown to Shutdown
102% - 125%	Overload 102% Load=XXX% X.XXKW	1 minute
125% - 150%	Overload 125% Load=XXX% X.XXKW	30 seconds
>150%	Overload 150% Load=XXX% X.XXKW	2 seconds

## BATTERY CHARGE WARNINGS

Since your UPS can provide battery backup only for as long as the batteries remain charged, these warnings should be acted on immediately.

Battery Charge Warning	LCD Display Message
Battery charge nearly depleted	BATTERY LOW
AC/DC charger not operating	CHARGER FAILURE!

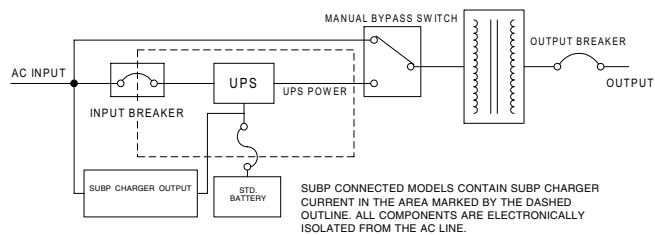
## OPERATION UNDER SHUTDOWN

Your UPS will shut down and the LCD will display a message if it detects one of the following conditions. Note: For all conditions, the “Input,” “Output” and “Bypass” LEDs will be illuminated.

Condition	LCD Display Message
Extended Overload (>150%)	OVERLOAD 150% SHUT DOWN
Output Short Circuit	SHORT CIRCUIT! SHUT DOWN
Remote Shutdown Command (FROM DB9 INTERFACE)	REMOTE SHUT DOWN
Remote Shutdown Command (from RJ11 interface)	EMERGENCY STOP! SHUT DOWN
Internal Faults	INVERTER TOO LO SHUT DOWN
	INVERTER TOO HI SHUT DOWN
	DC BUS +/- HIGH/LOW SHUT DOWN
	OVERTEMPERATURE SHUT DOWN

## OPERATION OF MANUAL BYPASS SWITCH

Turn this switch to “BYPASS” before performing any maintenance on the UPS with the connected load supported. Connected equipment will receive filtered AC mains power, but will not receive battery power in the event of a blackout.



## SWITCHING UPS TO “BYPASS” MODE

- Turn the “ON/OFF” Switch OFF. (LCD will read "ON BYPASS.")
- Turn the “Manual Bypass” Switch clockwise from NORMAL to BYPASS.
- Turn the AC Input Circuit Breaker OFF.
- Open battery fuse holders and remove the battery fuses from all battery packs and from all SU6K models.

## SWITCHING UPS TO “NORMAL” MODE

- Replace all battery fuses in the battery fuse holders and close the battery fuse holders.
- Turn the AC Input Circuit Breaker ON.
- Turn the “Manual Bypass” Switch counterclockwise from BYPASS back to NORMAL.
- Turn the “ON/OFF” Switch ON.

# Communications

## RS-232 INTERFACE

This female DB9 port connects your UPS via an RS-232 cable to a workstation or server equipped with Tripp Lite software. The port uses RS-232 communications to report UPS status and power conditions. Using this port, Tripp Lite software can monitor and manage network power and automatically save open files and shut down equipment during a blackout. Contact Tripp Lite Customer Support at (773) 869-1233 for information on available SNMP, network management and connectivity software and products.

RS-232 signals and operations include: load level, battery status, battery level, operation mode, AC input voltage, AC output voltage, AC input frequency, temperature inside unit, set shut-down delay time, enable/disable alarm and remote shutdown.

### Hardware:

Baud Rate: 2400 BPS  
Data Length: 8 bits  
Stop Bit: 1 bit  
Parity: NONE

### Pin assignment:

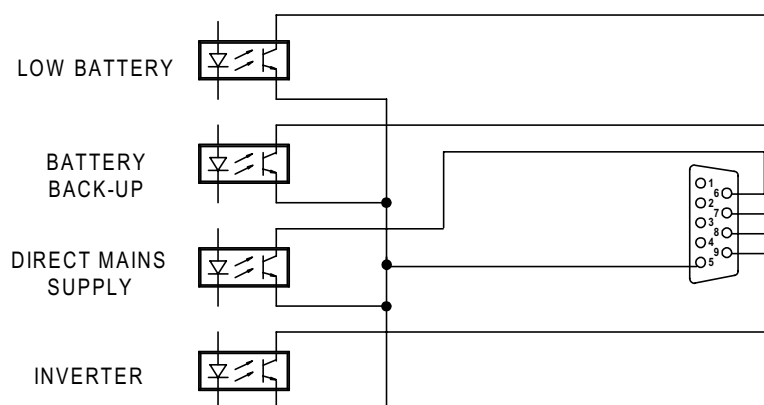
Pin 2: TXD (Transmit Data)  
Pin 3: RXD (Receiving Data)  
Pin 5: GND (Signal Ground)

## AS-400 INTERFACE:

This female DB9 port connects your UPS to an IBM AS-400 computer via the included AS-400 cable. The port uses AS-400 communications to report UPS status. It can be used to allow an AS-400 to automatically save open files and shut down its operating system during a blackout. AS-400 protocol includes: operation on inverter, operation on AC power supply, operation on battery and low battery alarm.

### Pin assignment:

Pin 5: Common  
Pin 6: Operation on AC power supply  
Pin 7: Low battery alarm  
Pin 8: Operation on inverter  
Pin 9: Operation on battery



**AS-400 INTERFACE TABLE**

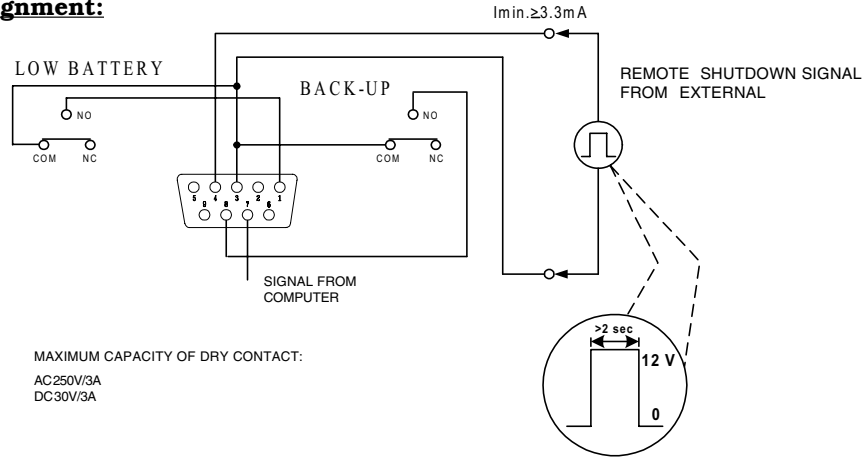
	Pin 6,5	Pin 7,5	Pin 8,5	Pin 9,5
Battery	OFF	*	ON	ON
Low Battery	OFF	ON	ON	ON
Direct Mains Supply	ON	OFF	OFF	OFF
Inverter	OFF	*	ON	*

\* Inactive: may be in either state.

## DRY CONTACT INTERFACE:

This female DB9 contact-closure port allows your UPS to send contact-closure signals to indicate that it is on battery back-up mode and if its batteries are running low. The port can also receive a remote shutdown signal.

### Pin assignment:



### DRY CONTACT INTERFACE TABLE

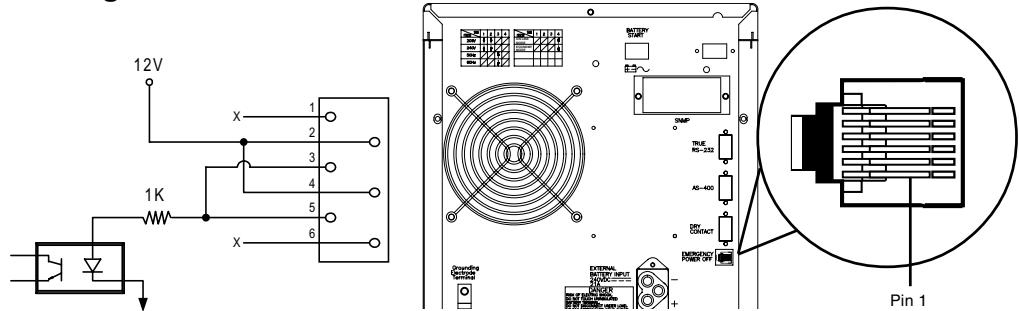
UPS Operating Mode	Pin 8,3	Pin 1,3
Normal	OPEN	OPEN
Back Up	CLOSE	*
Low Battery	CLOSE	CLOSE

\* Inactive: may be in either state.

## REMOTE EMERGENCY POWER OFF:

This RJ11 modular jack allows remote emergency shutdown.

### Pin assignment (SU6K Shown)



If there is a short between pins 2 and 3, 2 and 5, 4 and 5, or 3 and 4, the UPS will power off.

# Service

## Service

Your SmartOnline UPS is covered by the 2-year limited warranty period described below. A variety of service contracts is also available from Tripp Lite, including start-up service contracts and 3- to 5-year SafeSure on-site service contracts. For more information, call Tripp Lite Customer Service at (773) 869-1233.

# Warranty & Insurance

## 2-Year Limited Warranty

TRIPP LITE warrants its products including batteries to be free from defects in materials and workmanship for a period of two years from the date of initial purchase. After 90 days from the date of purchase, TRIPP LITE's obligation under this warranty is limited to replacing parts on such defective products. To obtain service under this warranty, you must call TRIPP LITE or an authorized TRIPP LITE service center. Products must be returned to TRIPP LITE or an authorized TRIPP LITE service center with transportation charges prepaid and must be accompanied by a brief description of the problem encountered and proof of date and place of purchase. This warranty does not apply to equipment which has been damaged by accident, negligence or misapplication or has been altered or modified in any way. This warranty applies only to the original purchaser who must have properly registered the product within 10 days of purchase.

The warranties of all TRIPP LITE surge suppressors are null and void if they have been connected to the output of any UPS system. The warranties of all TRIPP LITE UPS Systems are null and void if a surge suppressor has been connected to its output receptacles.

EXCEPT AS PROVIDED HEREIN, TRIPP LITE MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Some states do not permit limitation or exclusion of implied warranties; therefore, the aforesaid limitation(s) or exclusion(s) may not apply to the purchaser.

EXCEPT AS PROVIDED ABOVE, IN NO EVENT WILL TRIPP LITE BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF THIS PRODUCT, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. Specifically, TRIPP LITE is not liable for any costs, such as lost profits or revenue, loss of equipment, loss of use of equipment, loss of software, loss of data, costs of substitutes, claims by third parties, or otherwise.

The policy of TRIPP LITE is one of continuous improvement. Specifications are subject to change without notice.

## Ultimate Lifetime Insurance Policy (Valid in U.S. and Canada ONLY)

TRIPP LITE warrants, for the lifetime of the product, (at TRIPP LITE's option) to repair or replace (on a pro rata basis) directly connected equipment that is damaged due to power transients while properly connected to TRIPP LITE products offering the ULTIMATE® Lifetime Insurance Policy. Reimbursement or restoration for data loss is not included. Power transients include spikes and surges on the AC power, data or telephone lines that the TRIPP LITE products have been designed to protect against (as recognized by industry standards).

**AC Power Line Transients:** To claim damages, the TRIPP LITE product must be plugged into a properly wired and grounded outlet. No extension cords or other electrical connections may be used. The installation must comply with all applicable electrical and safety codes set forth by the National Electrical Code (NEC). Except as provided above, this warranty does not cover any damage to properly connected electronic equipment resulting from a cause other than an "AC power transient". If user meets all of the above requirements, TRIPP LITE will repair or replace (at TRIPP LITE's option) equipment up to the specified value (See ULTIMATE® Lifetime Insurance Policy Limits). No coverage is allowed for damage entering from telephone or data lines, unless they are separately protected, as described below.

**Telephone and Data Line Transients:** Tripp Lite will repair or replace directly connected equipment that is damaged by transients on telephone and/or data lines only when all such paths are protected by a Tripp Lite protection product(s) and the AC power (utility) line is simultaneously protected by a Tripp Lite power protection device (UPS, surge suppressor or line conditioner) with Ultimate Lifetime Insurance coverage.

Reimbursement dollar limits will be equal to that of the Tripp Lite power protection product. Coverage is excluded where a suitable environment for the protection device is not provided, including, but not limited to, lack of a proper safety ground. Telephone service equipment must also include a properly installed and operating "primary protection" device at the telephone service entrance (such devices are normally added during telephone line installation).

All above warranties are null and void if the TRIPP LITE product has been improperly installed, tampered with or altered in any way, or if the connected equipment was not used under normal operating conditions or in accordance with any labels or instructions. All claims under this warranty must be submitted in writing to Tripp Lite within 30 days of the occurrence or the claim will not be considered. This warranty does not include damage resulting from accident or misuse, and applies to the domestic (USA & Canada) use of these products only.

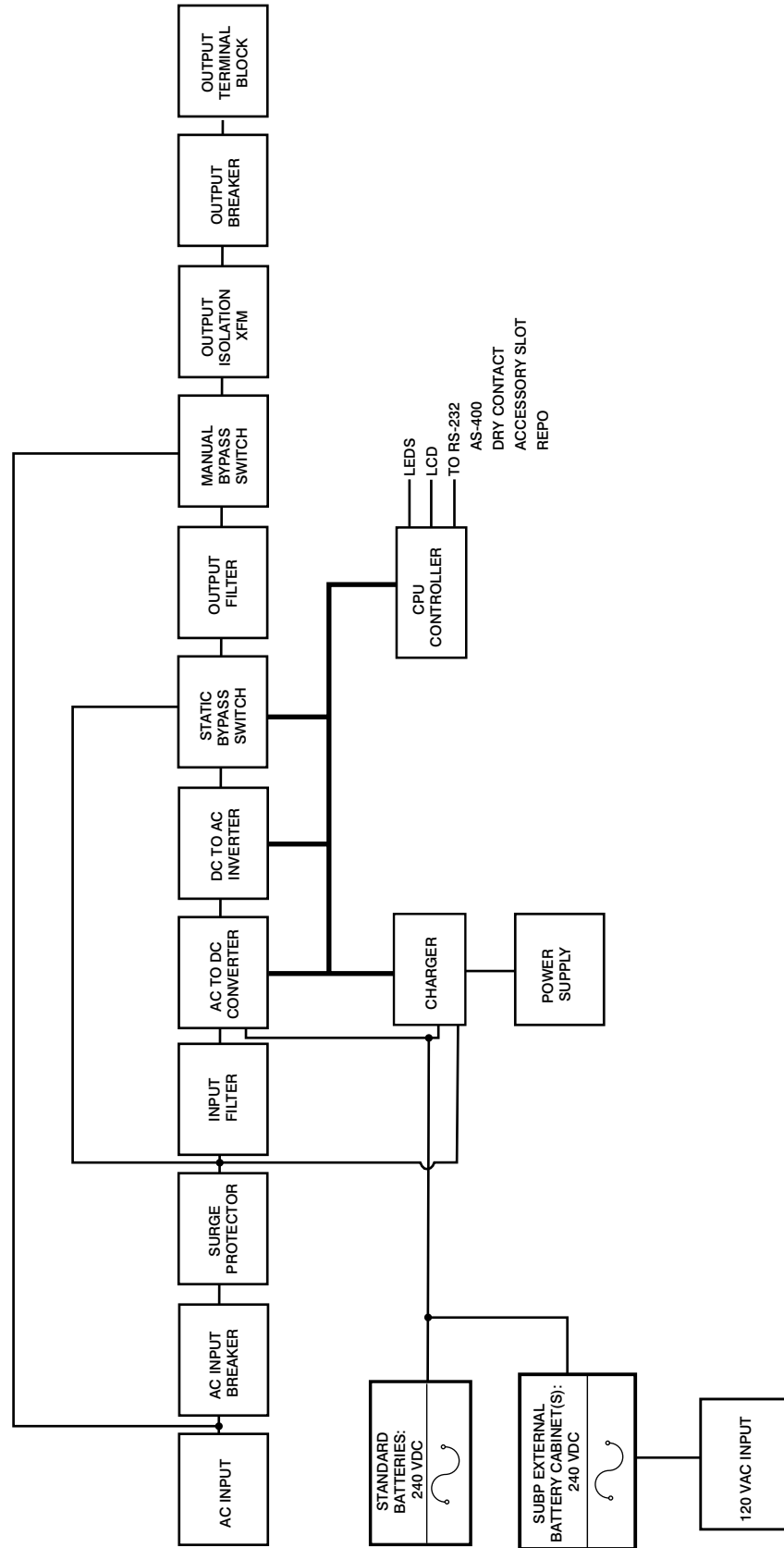
Tripp Lite reserves the right to determine whether the damage to the connected equipment is due to malfunction of the Tripp Lite product by requesting the equipment in question be sent to Tripp Lite for examination. This policy is above and beyond, only to the extent needed, of that provided by any coverage of connected equipment provided by other sources, including, but not limited to, any manufacturer's warranty and/or any extended warranties.

EXCEPT AS PROVIDED ABOVE, TRIPP LITE MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Some states do not permit limitation or exclusion of implied warranties; therefore, the aforesaid limitation(s) or exclusion(s) may not apply to purchaser.

EXCEPT AS PROVIDED ABOVE, IN NO EVENT WILL TRIPP LITE BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF THIS PRODUCT, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. Specifically, TRIPP LITE is not liable for any costs, such as lost profits or revenue, loss of equipment, loss of use of equipment, loss of software, loss of data, costs of substitutes, claims by third parties or otherwise.

To receive service under this warranty, you must be the original purchaser/user of the product in question. You must obtain a Returned Material Authorization (RMA) number from TRIPP LITE. Products must be returned to TRIPP LITE with transportation charges prepaid and must be accompanied by a brief description of the problem encountered and proof of date and place of purchase.

# Function Block Diagram





# Specifications

(Note: Excluding isolation transformer)

Model	SU6K	SU10K
<b>Input</b>		
Input Voltage	156V~280V Single Phase	156V~280V Single Phase
Input Frequency	50/60 Hz $\pm$ 3 Hz (selectable, pg. 7)	50/60 Hz $\pm$ 3 Hz (selectable, pg. 7)
Input Current	32A	50A
Inrush Current	<150A	<200A
Power Factor (Full Load)	>0.99	>0.99
Efficiency (Full Load/On-Line)	>87%	>88%
Circuit Breaker	40A	63A
<b>Output</b>		
VA	6000	10000
Watts (Power Factor: 0.7)	4200	7000
Waveform (On-Line)	Sinewave	Sinewave
Waveform (On-Battery)	Sinewave	Sinewave
Output Voltage (RMS)	120/208/240V	120/208/240V
Output Frequency	50/60 Hz ( $\pm$ 0.2 Hz on battery)	50/60 Hz ( $\pm$ 0.2 Hz on battery)
Voltage Regulation	$\pm$ 3%	$\pm$ 3%
Max. Harmonic Distortion (Linear Full Load)	<3%	<3%
(Non-Linear Full Load)	<6%	<6%
Overload Capabilities	102% (continuous) 102%~125% (1 min.) 125%~150% (30 sec.) >150% (2 sec.)	102% (continuous) 102%~125% (1 min.) 125%~150% (30 sec.) >150% (2 sec.)
Short Circuit Capability	90A*	160A*
Circuit Breakers	3 x 32A	3 x 63A
Crest Factor	3:1	3:1
<i>*The short circuit capability of 1ø 2W 120V for the 6kVA is greater than 180A, and for the 10kVA is greater than 320A.</i>		
<b>Battery &amp; Charger</b>		
Battery Type	12V/7AH	12V/7AH
Battery Quantity	20	40
Protection	30A/600V fuse	30A/600V fuse
Recharge Voltage	274VDC	274VDC
Recharge Rate (to 90%)	8 hrs.	4 hrs.
Low Battery Shutdown	200VDC	200VDC
Typical Backup Time (Full Load)	8 min.	10 min.
(Half Load)	25 min.	31 min.
<b>Operation</b>		
On-Line Transfer Time (Line to Battery, Battery to Line)	0 ms	0 ms
Audible Noise (Full Load @ 1 meter)	<50 dBA	<55 dBA
<b>Indicators</b>		
Both models include an LCD Display and LEDs (AC Line In, AC to DC, DC to AC, AC Output, Battery Back-Up, Bypass).		
<b>Communications</b>		
Both models include an RS-232 DB9 female connector, an AS-400 DB9 female connector, a dry contact DB9 female connector and an accessory slot.		
<b>Connections</b>		
Input Terminal Block	40A	60A
Output Terminal Block	40A	60A
Extended Battery Input Socket	40A	40A
<b>Physical Specifications</b>		
Dimensions of UPS and Battery Cabinet (H x D x W)		
	22-1/5 x 24-4/5 x 11 in. (56.5 x 63 x 28 cm.)	22-1/5 x 24-4/5 x 11 in. (56.5 x 63 x 28 cm.)
Net Weight (UPS)	286 lb. (130 kg)	242 lb. (110 kg)
Net Weight (Battery Cabinet)	-	278 lb. (126 kg)